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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/997,084

11/28/2001

Masanori Konishi

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22442

7590

11/18/2003

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EXAMINER

BERCK, KENNETH A

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/997,084

Applicant(s)

KONISHI ET AL.

Examiner

Ken A Berck

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 22-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 22-30 is/are rejected.
- 7) ☒ Claim(s) 4 and 19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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DETAILED ACTION

Claim Objections

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Claim 4 is objected to because of the following informalities: Claim 4, line 3, "lead" is assumed to be ~~least~~. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Suda et al. (US 6627144).

Regarding claim 1, Suda discloses (abstract) an infrared lamp with a carbon-based heating element with a carbon composition having compatibility and a carbon yield of substantially nonzero after firing with at least one kind of metallic compound, lead wires electrically connected to both ends of the carbon-based heating element and a quartz glass tube filled with inert gas and sealed accommodating the element and lead wires. The functional recitation that the change rate of the electric specific resistance of the carbon-based heating element, at a high temperature in lit state with respect to the electric specific resistance at a normal temperature in unlit stat is set in

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the range from -20% to +20% has not been given patentable weight because it is narrative in form. In order to be given patentable weight, a functional recitation must be expressed as a "means" for performing the specified function, and must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional language.

Regarding claim 2, Suda discloses (column 2, lines 12-24) the metallic compound included in the carbon-based heating element is at least one of metallic carbide, metallic boride, metallic silicide, and metallic nitride.

Regarding claim 3, Suda discloses (example 1) the composition of the carbon-based heating element includes resins.

Regarding claim 4, Suda discloses (example 1) the composition includes a powder consisting of graphite.

Regarding claim 22, and specifically the intended use statement of an object to be heated is disposed in parallel with the axial direction of the infrared lamp, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-7, 9-14, 16-18, 20-21 and 23-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suda et al. (US 6627144) in view of Toya et al. (US 6515264).

Regarding claim 5, Suda discloses all of the above claim limitations but fails to clearly point out connection members.

Toya discloses (fig 1) lead wires (11-12) electrically connected to the current passing portions via connection members (3a) having an inherent resistance smaller than that of the heating element and larger than the lead wire (column 8, lines 23-41, column 9, lines 25-30) in order to confine the main heat release to the heater element.

Hence it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the lamp of Suda with the lead wires electrically connected to the current passing portions via connection members having an inherent resistance smaller than that of the heating element and larger than the lead wire in order to confine the main heat release to the heater element, as taught by Toya.

Regarding claims 6 and 14, Suda discloses all of the above claim limitations but fails to clearly point out connection members.

Toya discloses (column 8, lines 23-41) the connection members are formed of a carbon-based substance in order to confine the main heat release to the heater element.

Hence it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the lamp of Suda with the connection members are formed of a carbon-based substance in order to confine the main heat release to the heater element, as taught by Toya.

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Regarding claim 7, Suda discloses all of the above claim limitations but fails to clearly point out the preferred material for the leads.

Toya discloses (column 9, lines 22-35) the lead wire is a metallic wire selected from among a tungsten, molybdenum or stainless wire in order to provide power to the element.

Hence it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the lamp of Suda with the lead wire is a metallic wire selected from among a tungsten, molybdenum or stainless wire in order to provide power to the element, as taught by Toya.

Regarding claims 9 and 16, Suda discloses (example 1) the quartz glass tube is filled with argon.

Regarding claims 10, 23 and 26-30, Suda discloses all of the above claim limitations but fails to clearly point out connecting a plurality of heating elements.

Toya discloses (fig 1) a long heating element with a plurality of carbon-based heating elements (2, A) in series via connection terminals (3a) and terminal plates (15) in order to prevent metallic contamination.

Hence it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the lamp of Suda with a long heating element with a plurality of carbon-based heating elements (2, A) in series via connection terminals (3a) and terminal plates (15) in order to prevent metallic contamination, as taught by Toya.

Regarding claims 11-13, 24, Suda discloses all of the above claim limitations but fails to clearly point out terminal plates.

Toya discloses (fig 1) the heating element assembly is inserted into a glass tube with the terminal plates (15) sealed in sealing portions and external lead wires (12) extending outside the tube connected to the plates in order to supply power to the elements.

Hence it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the lamp of Suda with the heating element assembly is inserted into a glass tube with the terminal plates (15) sealed in sealing portions and external lead wires (12) extending outside the tube connected to the plates in order to supply power to the elements, as taught by Toya.

Regarding claim 17, Suda discloses all of the above claim limitations but fails to clearly point out connection terminals.

Toya discloses (fig 1) connection terminal has a shape being concentric with the heating element and tube and is disposed so a predetermined clearance is provided in order to connect the element to the lead.

Hence it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the lamp of Suda with connection terminal has a shape being concentric with the heating element and tube and is disposed so a predetermined clearance is provided in order to connect the element to the lead, as taught by Toya.

Regarding claim 18, Suda discloses all of the above claim limitations but fails to clearly point out plural heating elements.

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Toya discloses (fig 1) plural heating elements (2, a) having different heating values in order to focus the heat release.

Hence it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the lamp of Suda with plural heating elements (2, a) having different heating values in order to focus the heat release, as taught by Toya.

Regarding claim 25, Suda discloses all of the above claim limitations but fails to clearly point out more carbon in the surface layer.

Toya discloses (fig 3) more carbon is contained in the surface layer than in the inside of the heating element in order to avoid lowering durability.

Hence it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the lamp of Suda with more carbon is contained in the surface layer than in the inside of the heating element in order to avoid lowering durability, as taught by Toya.

Claims 8 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suda et al. (US 6627144) in view of Toya et al. (US 6515264) and JP2000306657.

Suda and Toya disclose all of the above claim limitations but fail to clearly point out a coil spring portion.

657' discloses (fig 1) a coil spring portion (6) having a diameter almost close to the inner diameter of the quartz glass tube provided on at least one of the lead wires connected to both ends of the element in order to absorb the size change due to expansion.

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Hence it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the lamp of Suda and Toya with the coil spring portion having a diameter almost close to the inner diameter of the quartz glass tube provided on at least one of the lead wires connected to both ends of the element in order to absorb the size change due to expansion, as taught by 657'.

Allowable Subject Matter

Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record neither shows nor suggests an infrared lamp with the cross-sectional shape of the plate-shaped heating element being rectangular with the ratio of thickness to the width of the rectangle being 1:5 or more and the direction of the longer side of one of the plurality of elements is different from those of the other elements.

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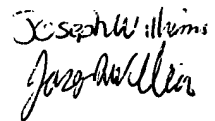
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ken A Berck whose telephone number is (703)305-7984. The examiner can normally be reached on Mon-Fri 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703)305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

kab 


Joseph Williams